



NEWSLETTER
SEPTEMBER 1983

Federal President's Column

The last meeting of our W.A. Branch was held at Princess Margaret Hospital for Children. This was a 'first' for our group, and several consultants presented the management of cases which are not generally seen in practice.

Discussion was both stimulating and rewarding. This type of programme is a must for people actively involved in children's dentistry. I recommend such meetings to state branches which have not already pursued this avenue.

It occurred to me that there must be a tremendous amount of interesting material on dental and allied medical conditions which pass through our practices daily, and which many of us never see. To this end I would like to see some communication in our newsletter, maybe under the heading of "Case Notes" or "Interesting Cases". I am sure the Editor of our newsletter would be only too pleased to receive and publish such items.

Why stop here? - there must be some research items that could be submitted to our Editor. I would urge our members to report any items of research which they would like to share with the Society. It may be of a clinical nature, possibly a successful technique, or the failure of some material to meet its publicized standards - or anything else.

I myself intend writing a short note on my own researches for the next newsletter - will you?

Des Kailis

Federal Secretary's Report

The comprehensive Diary produced by our Editor in the last newsletter prompts me to report on our federal planning.

1. For 1984 we have our Biennial Convention in October at the Sydney Opera House as reported by the N.S.W. Branch in the last newsletter.
2. At present we are negotiating with three overseas lecturers regarding a possible visit to all branches in 1985.
3. The South Australian Branch has offered to host the Biennial Convention in 1986 as that is when the State celebrates its Jubilee.
4. SUBSCRIPTIONS - late subscriptions pose a real problem to many who put in much effort to ensure that YOUR society is a healthy, active one. The chain starts with the hard working branch secretaries, then the Federal Secretary, the newsletter Editor, the I.A.D.C., and the A.D.A.. Federal Council has asked all states to send out their subscription notices in October. Prompt payment then will allow your representatives to have all their listings by the correct date of 1st January 1984.

John Brownbill

NEWS FROM THE BRANCHES

N.S.W. Branch

The last few months have been both busy and successful for the N.S.W. Branch.

Our meeting on Tuesday, 31st May, 1983, was probably the most ambitious to date. An interstate speaker, Dr. Arthur Telford, was flown to Sydney to present two lectures - one before and one after the Dinner Meeting. The number of members and guests attending was a record for a Society Meeting. Dr. Telford presented his thoughts in a relaxed and informative manner and much discussion was entered into. The topics were:-

- i. "Philosophy of Practice in 1983"
- ii. "Practical Clinical Solutions"

The meeting in July was also well attended and Mrs. Laura Brain from the Pre Natal Programme for Parents at Westmead Hospital presented an informative insight into the problems often faced by new parents and babies and how social attitudes, often quite ill founded, complicate the parents and child's life. Again there was much discussion and the meeting continued informally for quite some time.

Organization for the Biennial Convention continues. The venue is now confirmed as the Sydney Opera House and it is hoped that lunch will be provided in the Northern Foyer where the views over the Harbour are just splendid and, even for Sydney residents, always exciting. Our principal speaker is to be an Australian presently in the United States - Professor Wei.

Membership continues to grow even mid year, and now stands at 41.

Alain Middleton

Western Australia Branch

The W.A. Branch has held two most successful meetings since the last newsletter. The first, in June, was the first using the earlier start, and it was generally acclaimed as a success. The meeting was addressed by Perth Orthodontist, Peter Dillon, who gave an excellent paper on removable appliances. Peter pointed out a number of areas where operators might find themselves in strife through faulty diagnosis and appliance design. The clear messages were to not under-estimate removable appliances, nor to expect too much of them in certain circumstances.

The second meeting, in August, was held in the Dental Clinic at the Princess Margaret Hospital for Children. The staff of the clinic had organised five patients to attend - a brother and sister with Amelogenesis Imperfecta, a case of Dentinogenesis Imperfecta, a Cleft Lip and Palate case after bone grafting and finally, a Cleft Lip and Palate babe who is an in-patient of the hospital, and on whom surgery has yet to occur. After viewing the patients, the group was addressed by Orthodontist, Bill Brogan, and Paedodontist, Peter Gregory, and the cases were discussed. With its actual Clinical content, this meeting proved to be one of the best the branch has ever organised.

While mentioning Peter Gregory, one must admire his application. Between establishing his own private practice, travelling to Melbourne for the I.A.D.C. Congress in February and to Sydney twice, for his Fellowship examination and for the International Tooth and Bone Resorption Conference, and building a new home, he has conducted a most successful one day course on Paedodontics for the University of W.A. Extension Service, which was attended by close to 100. It is understood he is leading a campaign to increase the number of hours in each day!

Alistair Devlin

Queensland Branch

The June meeting was addressed by Dr. W. Young, from the University of Queensland Dental School. The subject of his paper was "Pathology of Soft Tissue and Bone in Younger Patients", particularly those conditions which result in early loss of deciduous teeth.

Later there was a round table discussion on the merit of the new Kodak Ekta Speed X-Ray film. John Brown and Arch Defferos both presented examples to demonstrate the granular appearance of the film. Discussion followed as to whether this would affect the ability of the operator to diagnose accurately the presence of dental caries.

In a break from tradition the annual Clinic Weekend was shortened to one full 'Clinic Day' and held in Brisbane on 6th August. Dr. J. Gage from the Dental School, who is involved with Genetic Research, was our main speaker. His topics covered the chromosomal basis of inheritance, the modes of inheritance, chromosomal abnormalities and dental genetic disorders. Dr. Gage has been awarded a research fellowship at Oxford University next year in recognition of his expertise in this field. All Society members wish him well. Other speakers who lent support on the day included Dr. L. McAllan (Aims and Method of Treatment of Amelogenesis and Dentinogenesis Imperfecta) and Dr. K. Seow (Etiology, Manifestations and Treatment of Vitamin D - Resistant Rickets). The A.S.D.C. Student's Prize for 1982 was presented to Mrs. Susan Howard at the annual clinic day. A very enjoyable dinner was held that evening at Jeffreys Restaurant, rounding off a most successful day.

The project on "Bottle Caries" begun by Branch members in 1981 has now been submitted for publication.

Our next meeting is the Annual General Meeting to be held at the United Services Club on October 3rd.

Kerrod Hallett

S.A. Branch

Our last meeting, held on Tuesday 16th August, was earlier in the month than usual to avoid the school holidays and members attendance was good.

The guest speaker was Dr. Tony Rogers, Senior Lecturer in Oral Biology, University of Adelaide recently returned from Sydney presenting a paper at I.A.D.R. His topic for the evening was "An Update in Cariology" - which may sound rather dry to many - but which, in fact, proved very stimulating and thought-provoking.

Dr. Rogers based his talk around the Caries Predictive Test (C.P.T.) which uses salivary streptococcus mutans and lactobacillus counts. He explained how the test is performed and briefly discussed its uses and benefits. It would appear that the profession at last has a scientific test to predict potentially cariogenic individuals.

Recent Swedish work with C.P.T., involving mothers-to-be, is proving extremely interesting and redefining the term "Preventive Dentistry". The C.P.T. is used to identify potential caries prone mothers-to-be who subsequently undergo intensive preventive programmes which result in a reduction in salivary mutans level to below a selected threshold of 3×10^5 per ml. At this level, the transmission of strep. mutans from mother to infant is prevented or greatly delayed - resulting in decreased caries experience in the progeny. The studies have been in progress for nearly four years and early results are proving to be very exciting.

Plans for our 1984 Country Convention are well in hand and details will be posted to all members of the Society in October. The Convention will be held over the second weekend of the Festival of Arts - i.e. Friday 9th March to Sunday 11th March. We have booked Hazelmere Estate, a Winery, Motel, Convention Complex at McLaren Vale - 40 km south of Adelaide and in the centre of the Southern Vales grape growing area. An interesting and varied programme is assured, both academically and socially - so we hope to see a goodly number there.

John Kibble

Victorian Branch

The Victorian Branch met on Thursday May 19th at University House. The presentations for the evening were given by the post-graduate students at the University of Melbourne. The subject was "Enamel Hypoplasia". Dr. James Lucas led the discussion and the case presentations were given by Dr. Augustin del Rio and Dr. Michael Morgan.

The case presentations encompassed both the definition and etiology of enamel hypoplasia. Various treatment regimes were discussed as was the need for genetic counselling and the need for family support for patients suffering the enamel hypoplasia deformity. Some emphasis was given to the current techniques available for restoration of affected teeth.

The Society also met on Thursday, July 14th and on this occasion Dr. Nancy MacMurray of the Department of Psychology, University of Melbourne, delivered a lecture on "Children's Dentistry and Psychology".

Dr. MacMurray presented information gained from studies investigating the attitude of children to dental anxiety. Dental anxiety was found to increase as a function of age between 5 to 9 years. At 9 years of age, approximately 90% of children experienced anxiety in the dental situation. Destructive behaviour was found to be very low however, but children experiencing anxiety frequently internalized this event and this was found at a higher level.

Investigations were described where patients viewed videotapes in the dental situation and demonstrated either mastery techniques, coping techniques and also a placebo videotape. The children shown the coping situation videotapes exhibited decreased apprehension and increased confidence through their dental experiences. It was found, however, that female children had more effective responses when shown mastery tapes, while male children experienced more effective personal management when shown the coping videotape.

The attitude of the operator to the patient was significant in the acceptance of the patient to information and to the patient's attitude. Operators who listened to a patient and gave positive support rather than finding something wrong had more effective relationships with their patients. Dentists expressing coping comments permitted child patients to develop coping skills.

Both meetings were well attended, testing the capacity of the University House dining room to cope with 50 visitors. Members continue to partake with active question periods.

The Victorian Branch is negotiating the allotment of an annual prize to the dental student demonstrating the highest capacity in the field of dentistry for children at the Dental School, University of Melbourne. Members feel that this contribution would encourage students and would contribute to the future development of the Society.

Gordon Hinrichsen

S.A. BRANCH COUNTRY CONVENTION -- PRELIMINARY NOTICE

MARCH, 1984 - Friday 9th to Sunday 11th

HAZELMERE ESTATE, McLAREN VALE, S.A.

An interesting and varied programme is assured, mixed with typical South Australian hospitality in the heart of the Southern Vales. Preliminary enquiries may be directed to the Secretary, J. Kibble, 19 Malcolm St., Glenelg East. 5045.

The relationship between Dentistry and Speech Pathology in the Management of Ankyloglossia.

(A Literature Review presented by M/S Anne Robinson* at the March meeting of the N.S.W.Branch.)

Ankyloglossia, or Tongue-Tie is a condition in which the lingual frenulum is short, thick and fibrosed. Often the fibrosis involves the underlying Genioglossus muscle. It ranges in severity from a mild case with only a mucous membrane band, to those where both the frenulum and the underlying fibres of the genioglossus are markedly fibrosed, and to the rare complete ankyloglossia where the tongue is fused to the floor of the mouth.

Incidence. No reliable incidence data has been reported, however the bulk of descriptive studies regard it as being relatively uncommon. DePorte and Parkhurst in a review of 273,604 births 1940 - 1942 found an incidence of .04%, McEnery and Gains '41 in a review of 1,000 children with speech disorders found an incidence of .4%.

Diagnosis. This is particularly difficult in infants as they vary greatly in their degree of tongue development. At birth, the tongue tip is relatively short with the frenulum extending almost to the tip. Horton et al '69 note that at times a bifid-like tip may be noted. During the early weeks, the tongue grows longer and thinner, the frenulum stretches and its tongue attachment often recedes to a lower position, Horton '69.

In a review of the literature, diagnosis is based on one or more of three measurements:

1. Clinical observation of lingual function. The patient is asked to move the tongue through its maximum range..

* On elevation - dorsum is flat

- there is dimpling in the dorsal area.
- greater elevation is achieved on the lateral margins than on the tip.

* On protrusion - there is notching of the tongue tip.

- range is reduced. Wallace '63 maintains that in true Tongue-Tie the tongue cannot protrude beyond the lower incisors.

In infants, Horton et al recommend the passive elevation of the tongue tip using a tongue blade.

2. Palpation of the tight genioglossus muscle on the undersurface of the tongue will help confirm the diagnosis.
3. Fletcher and Meldrum '68 discuss the need for objective measurements of the length of the frenulum, the free portion of the tongue and the distance from the mandible to the submandibular gland. To do this, they used a modified boley gauge with measuring calipers and linear scale on the same instrument.

Indications for treatment.

Horton et al discussed 102 cases which had been referred over a nine year period. Of these, only 57 were sufficiently severe to require surgery. The sex ratio was equal with 29 male and 28 female, and their ages ranged from 8 months to 59 years. The majority, were in the 10 - 20 year level. Of the group, 37 were referred by orthodontists, 10 by speech therapists, 8 by paediatricians or general practitioners and 2 by general dentists.

Throughout the literature, there was agreement that treatment should not proceed without the assessment and consultation of dentists and speech pathologists.

Dental considerations regarding treatment.

1. The inability to raise the tongue to the roof of the mouth may prevent the development of the adult swallow, and encourage the maintenance of the infantile or

tongue thrust swallow. It is the belief of some authors, namely Tuerk and Lubit '59, Horton et al '69, Whitman and Rankow '61 that the tongue thrust swallow will result in an open-bite malocclusion. Whitman and Rankow have also noted that if the tongue is held a little higher in the mouth, a lateral tongue thrust may be present causing an open-bite in the buccal segments on one or both sides.

2. The lower tongue carriage may affect mandibular growth. In utero, the jaws are formed in a mostly hereditary pattern, after birth their development is influenced by function, gravity and soft tissue forces. In normal feeding the tongue is thrust against both maxillary and mandibular arches. This provides for a balanced forward and lateral growth, maintaining normal facial proportions. Any limitation of the free upward motion of the tongue so that the tongue thrust is directed forward only will result in excessive growth of the anterior portion of the mandible, Horton et al '69, Whitman and Rankow '61, Tuerk and Lubit '59.

3. In addition to the open-bite and mandibular prognathism, Ketty '74 noted that mandibular central incisors were rotated towards the tongue. Hasan '64 recorded four cases in one family of diastema between mandibular central incisors caused by severe tongue-tie.

4. In a review of 24 cases with tongue-tie, Ketty '74 found that 6 displayed periodontal pockets and gingival recession in the region of the mandibular incisors. Mathewson et al '66 in a case report also noted the loss of gingival tissue and bone loss in the area of the lower central incisors. They noted that post operatively the gingival tissue improved and the periodontal problem seemed to be resolved. However the editor of the journal (J.Dent.Child.) added a note that he felt their optimism re the periodontal problem was unwarranted and that there were indications for specialist treatment.

5. Horton et al also note that a prominent lingual frenulum can repeatedly dislodge the lower plate of a denture-wearer when the tongue is elevated.

Problems of open-bite, mandibular prognathism and denture difficulties have been cited by several authors as adequate reasons for surgical intervention, Horton et al '69, Whitman and Rankow '61, Mathewson et al '66, Tuerk and Lubit '59.

Speech considerations re treatment.

In reviewing the literature, Catlin and DeHaan '71 distinguished three main philosophies: 1. There are few instances where a shortened frenulum affects speech sound production. McEnery and Gaines '41 indicated that it should logically interfere with the production of /t,d,l,n,r,/ but this was not so in their observed cases. They maintain that the presence of the tongue-tie is no proof that it is the cause of the co-occurring articulation defect. The only error they noted was on voiced and voiceless 'th'. Block '68 indicated that the following sounds could be affected /t,d,n,l,sh,s,zh,r,z,th/ but that surgery was only indicated if the child was not stimulatable for compensatory articulation patterns eg,. instead of approximating the tongue tip to the alveolar ridge, approximating the tongue dorsum to the hard palate.

2. The production of certain consonants is affected by limited tongue mobility. Whitman and Rankow '61 affected sounds are /t,d,n,l,/ and later /s,r,/.

3. Tongue-Tie does not cause speech defects but does contribute to difficulty in the rate and range of articulation. Shanks (cited by Horton) discusses that the tongue is capable of compensating for the restriction but that this is affected by such factors a dentures, missing incisors, tongue size, sensory and motor function of the tongue as well as degree of tongue-tie. Fletcher and Meldrum '68 conducted a very well designed study in which the relative length of the lingual frenulum is compared to articulation errors and diadochokinetic rates of movement. The length of the lingual frenulum was measured by the modified boley gauge referred to earlier. Subjects were then grouped according to greater or limited lingual freedom - 20 Ss in each group. Those Ss with limited freedom made significantly more articulation errors on the standardised test - 60 compared with 8 for those with greater lingual freedom. Interestingly the errors were mostly on the predicted

sounds whereas the errors for the other group were of a more developmental nature. There was also a trend for the Ss with limited lingual freedom to have slower D.D.K. rates, however this was only significant on bisyllabic patterns.

4. Psychological factors can also be very important. Ketty and Sciullo '74 presented a case where the patient became emotionally upset because other people could not understand his speech.

Treatment.

Catlin and DeHaan '71 noted that when the shortened frenulum consists mainly of mucosa with little fibrous tissue, then it is often treated in the newborn by cutting the frenulum with scissors, usually without anaesthesia. They also note that many practitioners regard this procedure as either dangerous or ineffective. When the mucous membrane binding of the frenulum is associated with a foreshortening of the genioglossus muscles, a shallow incision will often fail to correct the abnormality. An extensive division of the frenulum may injure the deep vessels of the tongue, the muscles which hold the tongue forward on the mandible or both. Other complications of simple frenulotomy cited include;

1. postoperative scar contracture resulting in more deforming ankyloglossia than originally present.
2. ulceration and infection of the floor of the mouth, resulting in feeding difficulties, dehydration, weight loss and often secondary scarring of the tongue.
3. haemorrhage.
4. hypermobility of the tongue and secondary attacks of asphyxia from glossoptosis.

Age of surgery.

Apart from a few authors who recommend snipping the frenulum of infants because of poor sucking, most authors would postpone frenulectomy until 4 or 5 years. This is because the tongue tip is not fully developed at birth and because the development of tongue muscles may effect a spontaneous cure of the tongue-tie by stretching or rupture of the frenulum (Wallace '63).

Surgical techniques.

- * historically the frenulum was ripped with a fingernail or sharp instrument.
- * electrocoagulation of the frenulum
- * excision of the frenulum and if necessary, the involved genioglossus muscle fibres and closure with Z-plasties.

All authors emphasize that no surgical procedure should be done without adequate anaesthesia and good exposure and control.

Postoperative speech therapy.

Most authors agree that good speech will not automatically occur after frenulectomy. (McEnery and Gaines '41, Ketty and Sciullo '74, Ayers and Hilton '77, Block '68). The purpose of therapy is two-fold firstly to work on the range and control of lingual movement for correct articulation and secondly to work on the tongue thrust swallow.

** Anne Robinson, B.App.Sc.(Sp.Path), Speech Pathologist, Westmead Centre, Dental Clinical School.

'References' - a list of References related to this Summary is available from Branch Secretaries.

ACUTE NECROTIZING ULCERATIVE GINGIVITIS IN CHILDREN WITH CANCER.

The findings for 15 immunosuppressed children with cancer who had 18 episodes of A.N.U.G. were reviewed. Predisposing factors were then assessed for their influence on the course of infection. The nutritional status and oral hygiene of most patients were poor. Eleven of the 18 episodes involved the spontaneous exfoliation of primary or permanent teeth, and 16 of the 18 episodes were complicated by other infections. The infection completely cleared in only two of ten patients who were not in remission and persisted for more than 15 weeks or until death in all of the remaining patients with active disease. By contrast, all six episodes of infection during remission cleared within an average of 4 to 5 weeks. Among the many contributing factors, decreased host resistance, relapse, and neutropenia seemed to have the most negative influence on recovery from this severe form of gingivitis.

(Ryan Michael. et al Am J. Diseases of Children. June 1983;137:592-594)

REMINERALIZATION OF ARTIFICIAL CARIES LIKE LESIONS WITH MILK.

Experimental work has suggested remineralization of early enamel lesions with exposure to solutions containing calcium and phosphate ions. Cow's milk contains high levels of calcium and phosphate ions, fats, and protein, and in this investigation the histological changes that occur in artificial carieslike lesions after exposure to milk were identified.

Artificial lesions in extracted premolars were created by exposure to lactic acid in 5% gelatin at pH 4.5 for eight weeks and by exposure to lactic acid containing 0.25 mM sodium tripolyphosphate (STPP) at pH 4.5 for two days. Control lesions were covered, and groups of experimental lesions were exposed to shaken pasteurized cow's milk for 20, 30, and 40 hours. Changes in the porosity of the artificial lesions were compared with those for the control lesions; sections were prepared and examined under a polarizing light microscope.

After 20 hours' exposure to milk, no changes in porosity were seen. Within 30 hours, there was a reduction in the pore volume in both types of lesions. Further reductions in pore volume were detected after 40 hours, with the development of a dark zone at the frontal

edge of the body of the STPP lesions. In gel lesions, the dark zone increased in width at the expense of the body of the lesion.

Findings indicate that the components of milk effectively diffuse into the inner edge of shallow gel or STPP lesions and reduce the porosity within the body of these lesions.

(Mor. Brian M. et al N.Z. Dent. J.

79(355):10-15, 1983)

AMALGAM REPAIR--A CLINICAL TECHNIQUE.

The repair of a defective amalgam restoration, abutting a new amalgam restoration against an existing one, is practiced in the operatory without a definitive technique. When new amalgam is condensed against old amalgam in vivo without pretreating, a visible and explorer-detectable discrepancy generally results at the junction. The possibility of leakage, with subsequent recurrent caries along this discrepancy, is a cause for concern.

In this technique, following the cavity preparation, using sound principles of cavity design, the old amalgam is pretreated with a mercury rich amalgam. The cavity is then packed with a normal amalgam mix, using adequate condensation pressure to ensure the removal of any excess mercury.

This has proven to be a clinically acceptable method of bonding new amalgam to old, but should not be seen as a panacea.

(Cowan, Robert D. J of Prosthetic D.

Jan 1983;49:49-52)

BRUSH & FLOSS ADEQUATE PREPARATION FOR APPLYING APF GEL.

Twenty-four patients scheduled for orthodontic tooth removal received one of the following treatments:

- 1) Brushing with no dentrifice and flossing with unwaxed floss.
- 2) Propy. with fluoride propy. paste and flossing with unwaxed floss.
- 3) Propy. with non-fluoride propy-paste and flossing with unwaxed floss.
- 4) Control group received no cleaning or flossing.

Groups 1,2,3, received conventional 4-min application of 1.23% APF in tray. Control group 4 received no topical fluoride.

The teeth were removed and fluoride levels at various depths were determined using proton activation analysis. Pre-treatment method 1. resulted in highest fluoride concentrations.

(Steele, et al. J. Paediatric Dent.

Sep 1982;4:228-233)